

Determination of Public Land (Rangeland) Health for 65023 WEST WHITE RANCH

The Record of Decision (ROD) for the New Mexico Standards for Public Land Health and Guidelines for Livestock Grazing Management (dated January 2001) adopted three Standards for Public Land Health. These are (1) Upland Sites Standard, (2) Biotic Communities, Including Native, Threatened, Endangered, and Special Status Species Standard and (3) Riparian Sites Standard.

The ROD also established a process for the BLM Field Offices for the implementation. Through a public participation process, the Roswell Field Office developed and adopted indicators to use in conjunction with existing monitoring data to assess these Standards.

Field assessment worksheets and other available data which evaluate the local indicators, were completed for this allotment. Based on the assessments, it is my determination:

1. Public Lands within the West White Ranch Allotment #65023 Hill West pasture meet the Upland and Biotic Standards; and 2. The 80 acres of Public Lands within the West White Ranch Allotment #65023 River pasture meet the Upland Site Standard; but do not meet the Biotic and Riparian Standards.

/s/ T. R. KREAGER

Assistant Field Manager

09/12/2003

Date

Standards of Public Land Health

Evaluation of 65023 WEST WHITE RANCH Allotment

[05/13/2003]

The Roswell Field Office conducted rangeland health assessments at two study sites within the WEST WHITE RANCH Allotment #65023. The assessments looked at the Soil/Site Stability, Hydrologic Function and Biotic Integrity indicators within the vicinity of each study site. Existing monitoring data was incorporated into and in support of the field assessment. The summary of each assessment is attached and shown in the following table.

Study Area or Assessment Area	UPLAND			BIOTIC			RIPARIAN		
	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet	Meets	Monitor an Indicator	Does Not Meet
65023-BLM RIVER-N013 (*)	X	*			*	X		*	X
65023-HILL WEST-D051 (*)	X			X	*		N/A		

Twenty-two (22) indicators for Rangeland Health were evaluated for the West White allotment #65023; 10 of these assessed met Ranch; 10 of these assessed soil/site stability, 11 assessed hydrologic functions and 13 assessed biotic integrity. These qualitative assessments along with quantitative information from long-term monitoring studies on two study areas on the allotment were utilized to assess the rangeland health of the public land within the allotment. These quantitative evaluations were performed by the Roswell Field office staff starting in the early 1980's. These included ground and vegetative cover and composition, production, frequency, and ecological condition as calculated from these collections which have been scheduled approximately every 5 years.

Assessments were performed on 2 study/trend plot locations on this allotment. The Hill West Pasture and the BLM River Pasture. Drought has had an impact on these sites over the last few years. Hill West pasture, a SD-3 Sandy ecological site, rated indicators: bareground, structural/functional groups, and annual production in the Moderate category. Percent bareground at present is 45-50% of total ground cover, which exceeds the upper expected range for the ESD, which is 15-20%. However the long-term trend datum indicates an average of 56%. Due to the prevailing drought conditions, and taking into account a 20 year data set, a rating of Moderate is justifiable. The number of Functional/structural groups for this site has been moderately reduced, and also the subdominant groups like black grama (*Bouteloua eriopoda*), blue grama (*Bouteloua gracilis*) and bush muhly (*Muhlenbergia porteri*) have been replaced by grasses such as

threeawn (*Aristida* spp.), fluffgrass (*Dasyochloa pulchella*) and burrograss (*Scleropogon brevifolius*). According to the ESD and long-term data, both have perennial grass occurrences, which are absent on this site at present. The only exception was the occurrence of sand dropseed (*Sporobolus cryptandrus*), which was found only in small amounts. Annual production which rated at Moderate, is approximately only 1/2 of potential for the ESD. A range from 600-1200 lbs/ac or 600-1200 kg/ha is the expected for the site. For this particular site, the annual production of 450-500 lbs/ac or 450-500 kg/ha is expected as a long-term average. At present, the amount of production is significantly lower, which is suggestive of a drought related situation. Mesquite (*Prosopis glandulosa*) is common throughout the site, and is the principal shrub present. Therefore a rating of Moderate to Extreme is given to the invasive plants indicator. Another shrub, snakeweed (*Gutierrezia sarothrae*) has been known to occur in substantial amounts, but not at the time of the assessment. All other indicators for this site rated in the None to Slight to Slight to Moderate category.

The drought in the area of the Hill West Pasture has had an affect on the amount of bareground. The amount of bareground present suggests that the drought has had a negative affect on the area. The drought in the site area has created a hydrologic condition that has decreased the amount of plant cover which has negatively affected water infiltration into the soil. Gypsum and dolomite rock outcrops are present in the area from the Yates Formation. Pediment gravel deposit outcrops are present from Quaternary Surficial Deposits. The Ustifluvents soil unit in the area is underlain by gypsum, dolomite, and siltstone of the Yates Formation and pediment gravels from Quaternary Surficial Deposits.

The BLM River Pasture has 80 acres of public land straddling the Pecos River. During the initial phase of the Pecos River Salt Cedar Control Project conducted by the Carlsbad Soil and Water Conservation District in September 2002, this area was treated with Arsenal by aerial application. The public land located along the Pecos River and within the project area were to be excluded from the aerial application, however some of the smaller parcels were inadvertently treated. This includes the entire 80 acres of public land within this allotment.

The herbaceous vegetation in this area was severely affected by the Arsenal application. Forbs, grasses and many shrubs within this area were either killed or severely set back by this application. Twelve months (and a growing season) after the treatment only scattered live plants are present on the site. Recovery of this site should occur over time.

Riparian Evaluation - The chemical treatment was extremely effective at killing saltcedar and Russian olive, and non-target species as well, including riparian vegetation growing along the banks of the river. These species have not recovered and banks are subject to erosion. Due to the removal of a significant amount of riparian and floodplain vegetation in the 80-acre parcel and adjacent private lands, the evaluation of the functioning condition of the riparian community is degraded until such time the vegetation recovers either over a long period of time naturally, or a shorter period of time through habitat improvement projects.

In general, due to the hydrologic control of the river from agricultural demands, the aquatic habitat is stabilized although not in the best condition for aquatic species. Control of water in the river is not within the purview of the BLM. Prior to the chemical treatment, riparian habitat is generally good and is based on riparian monitoring plots established by the NMNHP.

The hydrologic functions on this site have been affected by the aerial spray. The reduced amount of live vegetative cover may have some short term effects on the infiltration rate; however, this may be offset somewhat by the increased amount of standing litter that remains in place. Gypsum and dolomite rock outcrops are present in the area from the Yates Formation. Pediment gravel deposit outcrops are present from Quaternary Surficial Deposits. The Ustifluents soil unit in the area is underlain by gypsum, dolomite, and siltstone of the Yates Formation and pediment gravels from Quaternary Surficial Deposits.

The (*) indicates that the assessment had one or more indicator(s) rated moderate/extreme or extreme. These indicators are:

- Plant Mortality/Decadence
- Annual Production
- Invasive Plants
- Reproductive Capability of Perennial Plants
- Wildlife Habitat
- Wildlife Populations
- Special Status Species Habitat

These indicators by themselves are not enough to rate the site as not meeting a standard but may warrant future monitoring.

Recommendations: Wildlife and T/E - Remove the 80 acres from livestock grazing until such time that the area recovers. Establish the 80-acre parcel as an experimental plot to conduct various habitat improvement techniques to re-establish the area following chemical treatment. The results from the work could be used to demonstrate techniques to other BLM and private lands on methods to recover treated floodplain habitat along the Pecos River. Projects should be implemented as soon as FY 2004 and would include mechanical clearing of dead standing saltcedar and reseedling.

RFOs Upland and Biotic Standard Assessment Summary Worksheet						
SITE 65023-BLM RIVER-N013						
Legal Land Desc	NENE 20 0070S 0260E Meridian 23		Acreage		81	
Ecosite	042CY017NM BOTTOMLAND SD-3		Photo Taken		N	
Watershed	13060003200 FIVE MILE					
Observers	BAGGAO/SPAIN		Observation Date		08/19/2003	
County Soil Survey	NM644 CHAVES NORTH		Soil Var/Taxad			
Soil Map Unit	USA		Soil Taxon Name		USTIFLUVENTS	
Texture Class	NM644 SIL		Soil Phase		USTIFLUVENTS	
Texture Modifier	NM644 LOAM					
Observed Avg Annual Precipitation			Observed Avg Growing Season Precipitation			
NOAA Annual Precipitation	12.64		NOAA Growing Season Precipitation		8.3	
NOAA Avg Annual Precipitation	13.2		NOAA Avg Growing Season Precipitation		10.84	
Disturbances and Animal Use:	This area has been severely affected by the salt cedar aerial spray project in September 2003.					
Part 2. Attributes and Indicators						
		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills					X
Comments:	Arsenal aerial spray 9/02					
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes			X		
Comments:						
S H	Bare Ground			X		

Comments:						
S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion			X		
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff			X		
Comments:						
S H B	Compaction Layer				X	
Comments:						
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence	X				
Comments:	Arsenal aerial spray 9/02.					
H B	Litter Amount					X
Comments:	Arsenal aerial spray 9/02.					
B	Annual Production	X				
Comments:	Arsenal aerial spray 9/02					
B	Invasive Plants			X		
Comments:	Arsenal aerial spray 9/02.					
B	Reproductive Capability of Perennial Plants		X			
Comments:	Arsenal aerial spray 9/02.					
S	Physical/Chemical/Biological Crusts				X	
Comments:						

B	Wildlife Habitat	X				
Comments:	This is a floodplain habitat that supports a narrow grove of cottonwood trees. The site was invaded by saltcedar and Russian olive and was inadvertently treated in Sep 2002 by CID. The habitat is in degraded condition as much of the vegetation was killed by the treatment and has not recovered as of this writing.					
B	Wildlife Populations	X				
Comments:	No specific wildlife population information. Species of concern include mule deer, neotropical migrants, upland game birds and various terrestrial nongame and aquatic species. Upland species populations have declined due to vegetation being killed by a saltcedar spray program conducted by CID in Sep 2002.					
B	Special Status Species Habitat		X			
Comments:	This comment pertains to primarily the aquatic system as it may be affected by the treatment, e.g., runoff, bank destabilization, etc.					
B	Special Status Species Populations			X		
Comments:	No specific population information for aquatics within the treatment area on public land. Because of the magnitude of the project, which included private lands above and below the site, the cumulative impacts may be considered for the entire reach of the river on the allotment.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	3	4	3
H	Hydrologic	0	0	4	4	3
B	Biotic	4	2	4	2	1

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the

ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil	The Soil indicators were affected by the saltcedar aerial spray in 2002 but are slowly recovering.	0	3	7
Hydrologic	The Hydrologic indicators were affected by the saltcedar aerial spray in 2002 but are slowly recovering.	0	4	7
Biotic	The Biotic indicators were severely affected by the saltcedar aerial spray in 2002 but are expected to recover over time.	6	4	3

Site Notes: Wildlife and T/E - This parcel of 80 acres was aially treated with ARSENAL in Sep 2002 as part of the CID saltcedar eradication program. The cumulative impacts of the project should be considered as many acres of private land were also treated adjacent to this public land parcel along the Pecos River. The results of the treatment were dramatic with much of the vegetation killed, including the target species. The cottonwood grove was affected by possibly overspray. The loss of vegetation for browse and cover occurred over the entire public lands as well as the adjacent private lands included in the treatment. Specific resource studies (wildlife, range, soils, etc) should be conducted to monitor the effects of the treatment (long term and short term).

RFOs Upland and Biotic Standard Assessment Summary Worksheet

SITE 65023-HILL WEST-D051

Legal Land Desc	SWSE 21 0070S 0260E Meridian 23	Acreage	365
Ecosite	042CY004NM SANDY SD-3	Photo Taken	N
Watershed	13060003220 FILLMORE		
Observers	SPAIN/NAVARRO/MCGEE	Observation Date	05/13/2003
County Soil Survey	NM644 CHAVES NORTH	Soil Var/Taxad	
Soil Map Unit	PoA	Soil Taxon Name	POQUITA
Texture Class	NM644 FSL	Soil Phase	POQUITA
Texture Modifier	NM644 FINE SANDY LOAM,DR		
Observed Avg Annual Precipitation		Observed Avg Growing Season Precipitation	
NOAA Annual Precipitation	12.64	NOAA Growing Season Precipitation	8.3
NOAA Avg Annual Precipitation	13.2	NOAA Avg Growing Season Precipitation	10.84
Disturbances and Animal Use:			

Part 2. Attributes and Indicators

		Departure from Ecological Site Description/Ecological Reference Areas				
Attribute	Indicators	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S H	Rills				X	
Comments:						
S H	Water Flow Patterns				X	
Comments:						
S H	Pedestals and/or Terracettes					X
Comments:						
S H	Bare Ground			X		
Comments:						

S H	Gullies					X
Comments:						
S	Wind-scoured, Blowouts, and/or Deposition Areas					X
Comments:						
H	Litter Movement				X	
Comments:						
S H B	Soil Surface Resistance to Erosion				X	
Comments:						
S H B	Soil Surface Loss or Degradation				X	
Comments:						
H	Plant Community Composition and Distribution Relative to Infiltration and Runoff				X	
Comments:						
S H B	Compaction Layer					X
Comments:						
B	Functional/Structural Groups			X		
Comments:						
B	Plant Mortality/Decadence				X	
Comments:	Drought effects.					
H B	Litter Amount				X	
Comments:						
B	Annual Production			X		
Comments:						
B	Invasive Plants		X			
Comments:	Primarily mesquite and to the north of the study area. Most of this occurs in the coppice dune area.					
B	Reproductive Capability of Perennial Plants				X	
Comments:						
S	Physical/Chemical/Biological Crusts				X	
Comments:						

B	Wildlife Habitat				X	
Comments:						
B	Wildlife Populations				X	
Comments:						
B	Special Status Species Habitat					X
Comments:	None known to occur.					
B	Special Status Species Populations					X
Comments:	None known to occur.					

Part 3. Summary

A. Indicator Summary - Each of the indicators are associated with one or more of the attributes below. An indicator is placed in a category (columns) above and summed for each of the Standard Attributes.

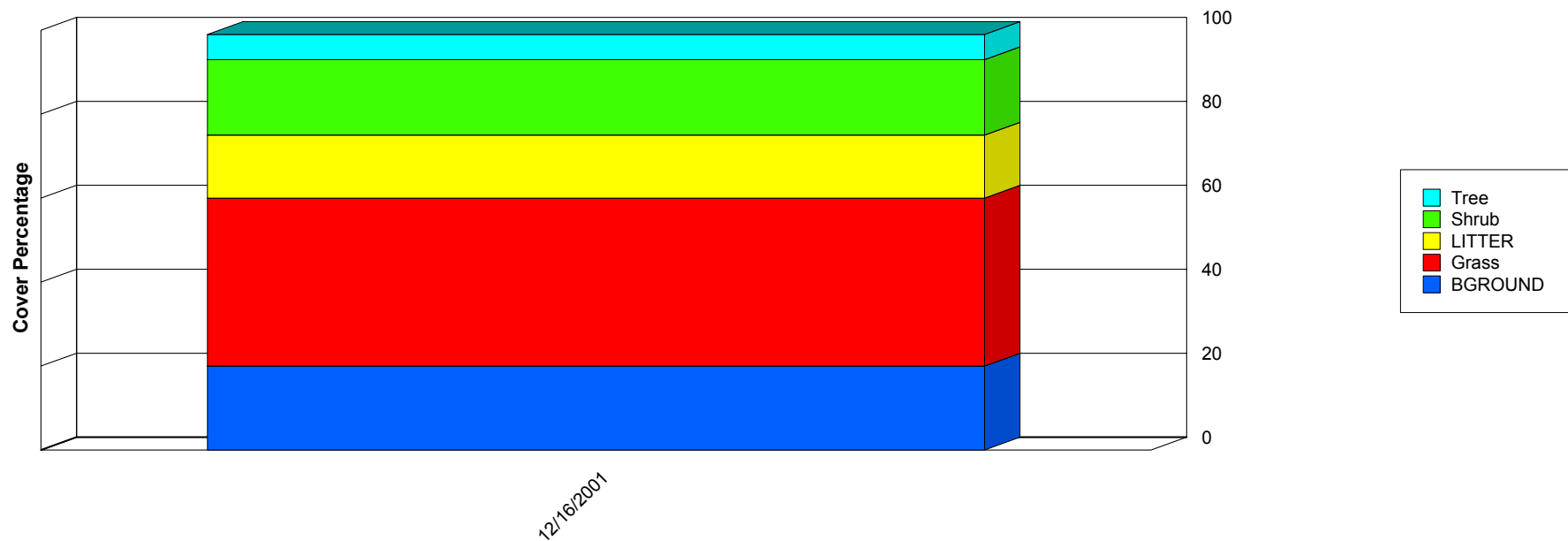
Standard Attribute		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
S	Soil	0	0	1	5	4
H	Hydrologic	0	0	1	7	3
B	Biotic	0	1	2	7	3

B. Attribute Summary. In this table, the Extreme and Extreme to Moderate columns in the table above are merged for the *Does not Meet* column, Moderate becomes *May Need More Info*, and Slight to Moderate and None to Slight merge to form the *Meets* columns. Values from the table are summarized below. Space is provided for rationale of the determination. This space should most certainly be used when the determination by the ID team conflicts with the summarized values. Provide the sources of information that lead to the determination. X out the appropriate box for each attribute to denote final agreed upon determination by the ID team.

Attribute	Rationale	Does Not Meet	May Need More Info	Meets
Soil		0	1	9
Hydrologic		0	1	10
Biotic	Mesquite (<i>Prosopis glandulosa</i>) is common	1	2	10

	throughout. However, with adequate precipitation, the site should recover regardless of brush encroachment.			
Site Notes: This range site has had past livestock use in 2002 fall. Burrograss is very evident on this site. Early spring forbs such as bladderpod have since dried up.				

Ground Cover Trends

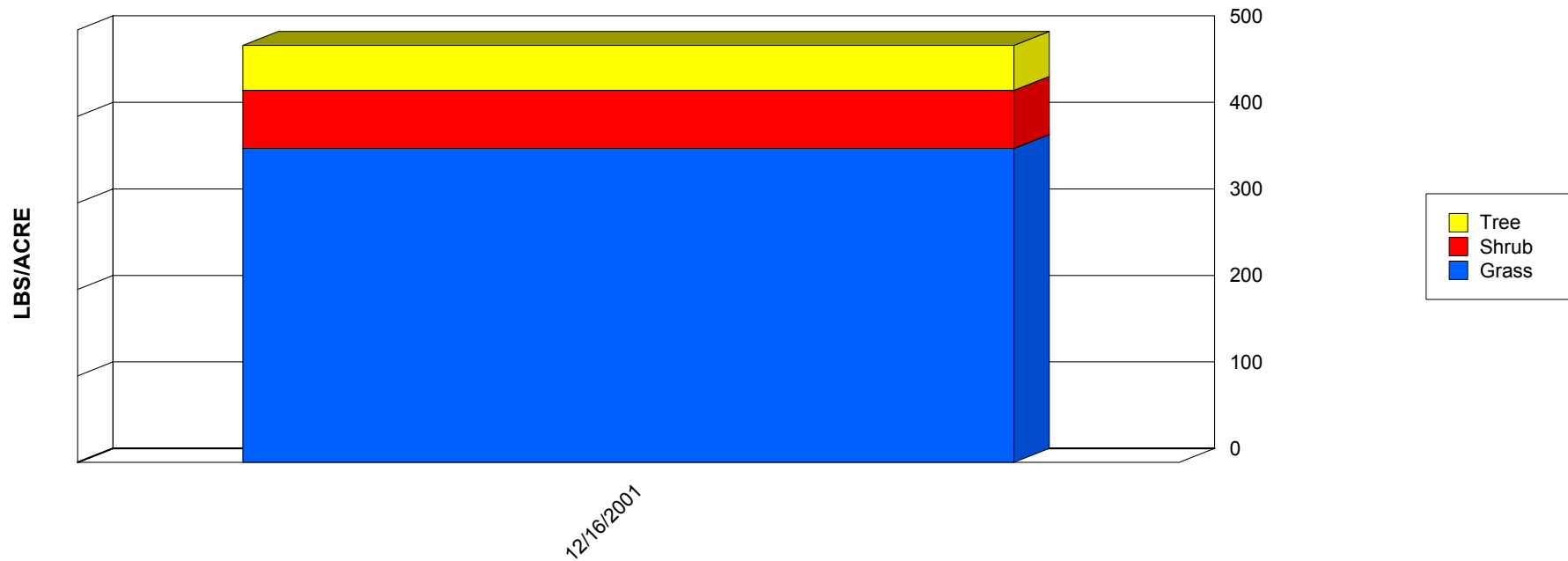


	12/16/2001
BGROUND	20.00
Grass	40.00
LITTER	15.00
Shrub	18.00
Tree	6.00
Total	99.00

Report Parameters

SITE NAME LIKE 65023-BLM RIVER-N013
 ON/AFTER 10/01/1980
 ON/BEFORE 09/30/2002

Production Lbs/Acre Trends

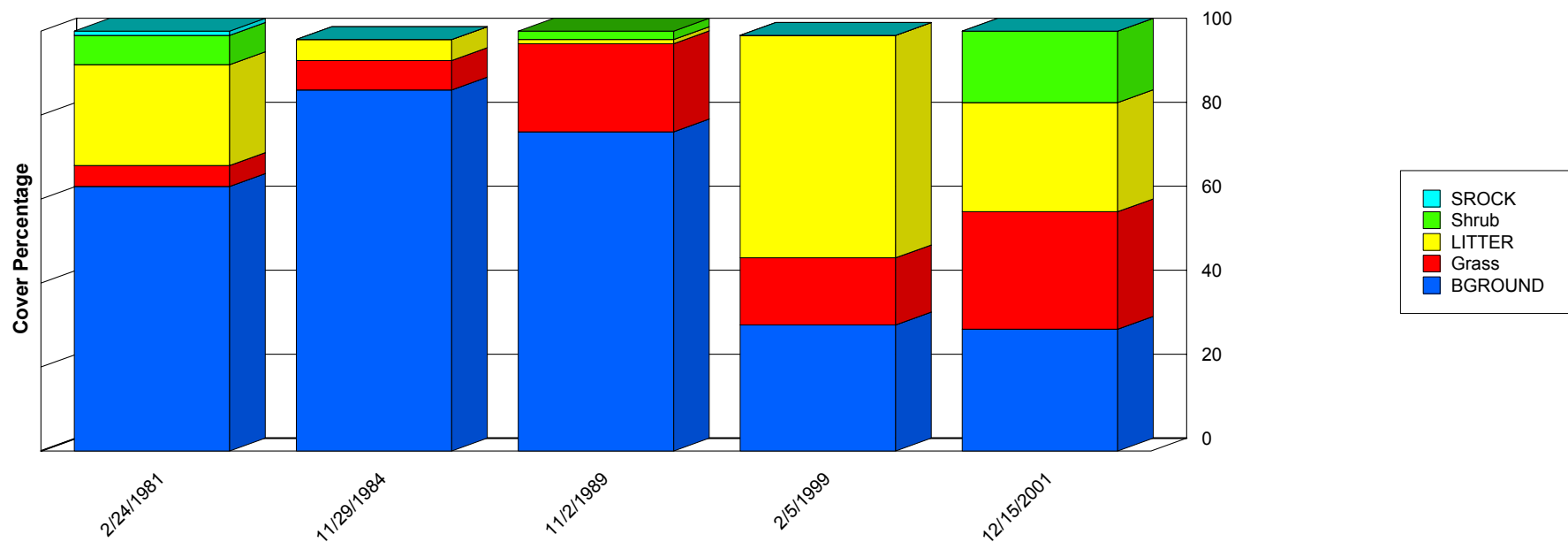


	12/16/2001
Grass	363.00
Shrub	67.00
Tree	52.00
Total	482.00

Report Parameters

SITE NAME LIKE	65023-BLM RIVER-N013
ON/AFTER	10/01/1980
ON/BEFORE	09/30/2002

Ground Cover Trends



	2/24/1981	11/29/1984	11/2/1989	2/5/1999	12/15/2001
BGROUND	63.00	86.00	76.00	30.00	29.00
Grass	5.00	7.00	21.00	16.00	28.00
LITTER	24.00	5.00	1.00	53.00	26.00
Shrub	7.00	0.00	2.00	0.00	17.00
SROCK	1.00	0.00	0.00	0.00	0.00
Total	100.00	98.00	100.00	99.00	100.00

Report Parameters

SITE NAME LIKE 65023-HILL WEST-D051
 ON/AFTER 10/01/1980
 ON/BEFORE 09/30/2002

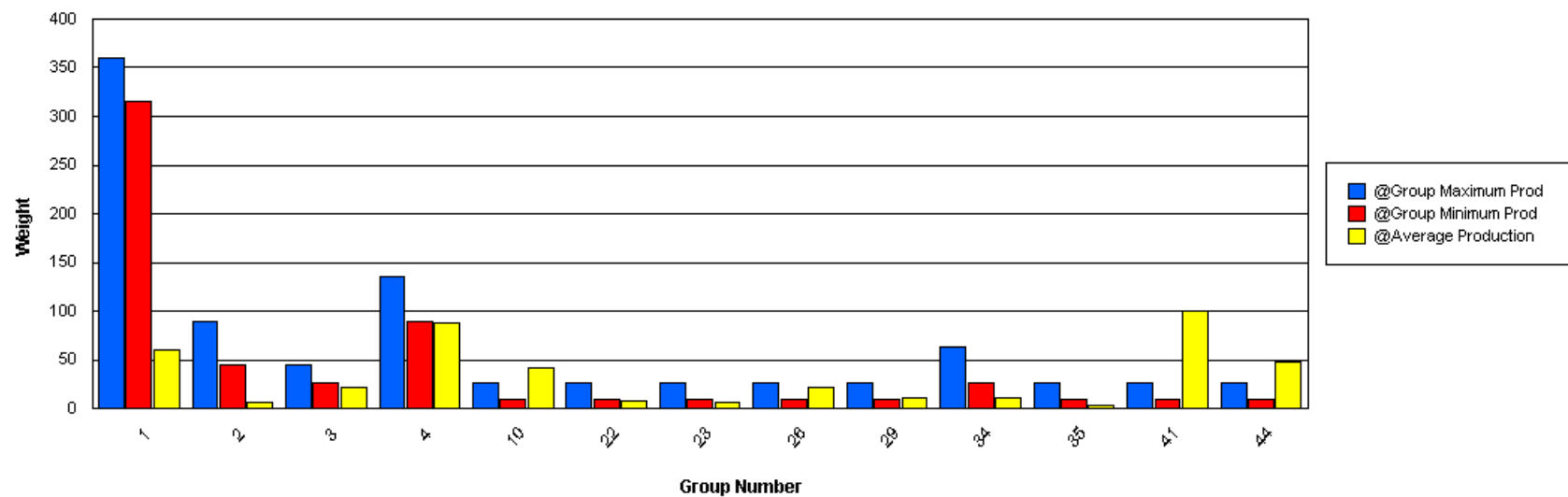
Functional / Structural Groups

Report Parameters

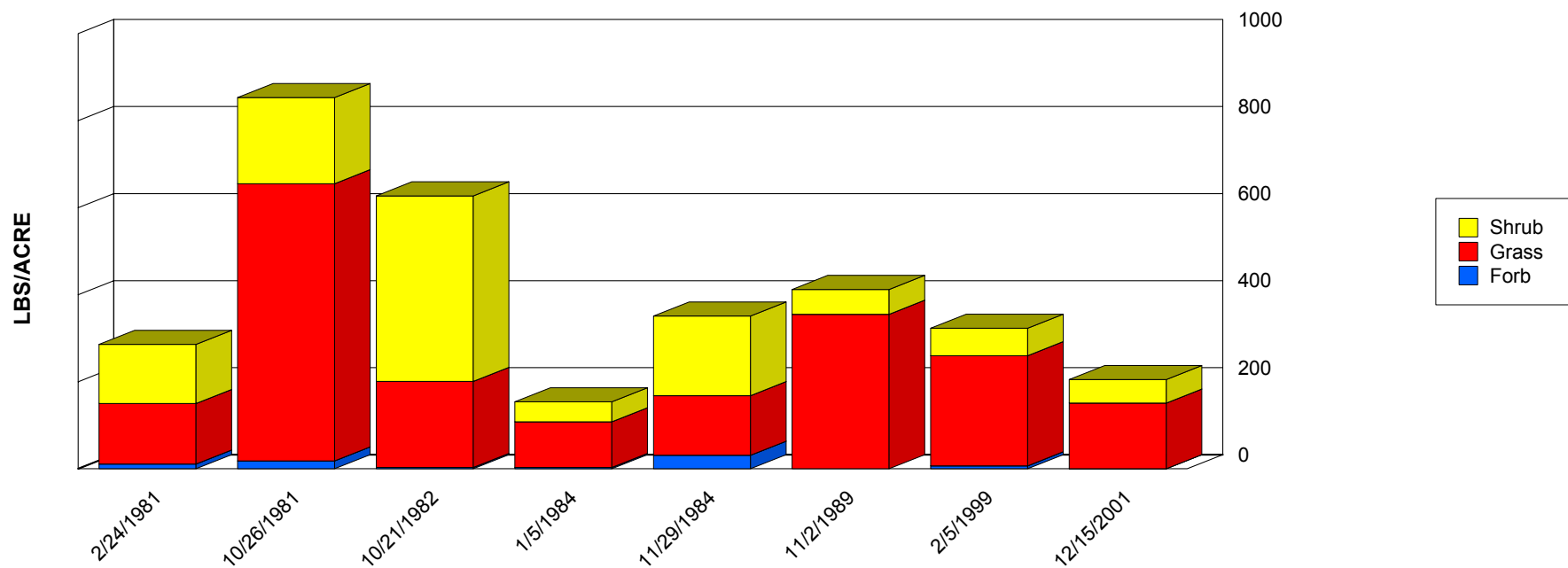
SITE NAME LIKE 65023-HILL WEST-D051
 ON/AFTER 10/01/1980
 ON/BEFORE 09/30/2002
 MIN LBS TO GRAPH 3
 SELECTED ECOSITE 042CY004NM

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
1	Grass	BOER4	315	360	31.00	95.00	60.13	26.14
2	Grass	BOGR2	45	90	0.00	27.00	6.00	9.62
3	Grass	MUPO2	27	45	0.00	73.00	22.14	22.27
4	Grass	SPCO4	90	135	0.00	3.00	1.00	1.41
4	Grass	SPCR	90	135	2.00	284.00	85.00	102.21
4	Grass	SPFL2	90	135	0.00	13.00	1.86	4.55
5	Grass	ARIST	27	45	0.00	9.00	1.57	3.06
6	Grass	SEMA5	27	45	0.00	2.00	0.50	0.87
9	Grass	PAOB	9	27	0.00	11.00	1.83	4.10
10	Grass	HIJA	9	27	0.00	40.00	10.83	15.92
10	Grass	HIMU2	9	27	0.00	51.00	31.25	14.31
22	Grass	MUAR	9	27	0.00	24.00	7.71	10.07
23	Grass	MUAR2	9	27	0.00	15.00	6.50	5.96
26	Grass	SCBR2	9	27	0.00	83.00	21.88	24.10
29	Grass	BOHI2	9	27	0.00	4.00	2.00	2.00
29	Grass	ERPU8	9	27	0.00	10.00	2.71	3.19
29	Grass	MUTO2	9	27	0.00	43.00	7.17	16.03
30	Forb	CRPO5	27	63	0.00	1.00	0.33	0.47
32	Forb	LESQU	27	63	0.00	3.00	1.33	1.25
34	Forb	AAFF	27	63	0.00	9.00	3.29	3.45
34	Forb	XADR	27	63	0.00	24.00	8.00	11.31
35	Forb	PENA	9	27	0.00	6.00	2.29	1.91
35	Forb	SOEL	9	27	0.00	3.00	0.57	1.05
35	Forb	SOLAN	9	27	0.00	1.00	0.33	0.47
39	Shrub	ATCA2	9	27	0.00	11.00	2.57	3.77
41	Shrub	GUSA2	9	27	2.00	333.00	101.00	106.57

Group	Plant Type	Species	Low Wt Allowed	High Wt Allowed	Minimum	Maximum	Average	STDEV
44	Shrub	PRGL2	9	27	0.00	123.00	48.14	40.67



Production Lbs/Acre Trends



	2/24/1981	10/26/1981	10/21/1982	1/5/1984	11/29/1984	11/2/1989	2/5/1999	12/15/2001
Forb	11.00	18.00	3.00	3.00	31.00	0.00	7.00	0.00
Grass	139.00	637.00	198.00	105.00	137.00	355.00	253.00	151.00
Shrub	136.00	198.00	426.00	46.00	183.00	57.00	63.00	54.00
Total	286.00	853.00	627.00	154.00	351.00	412.00	323.00	205.00

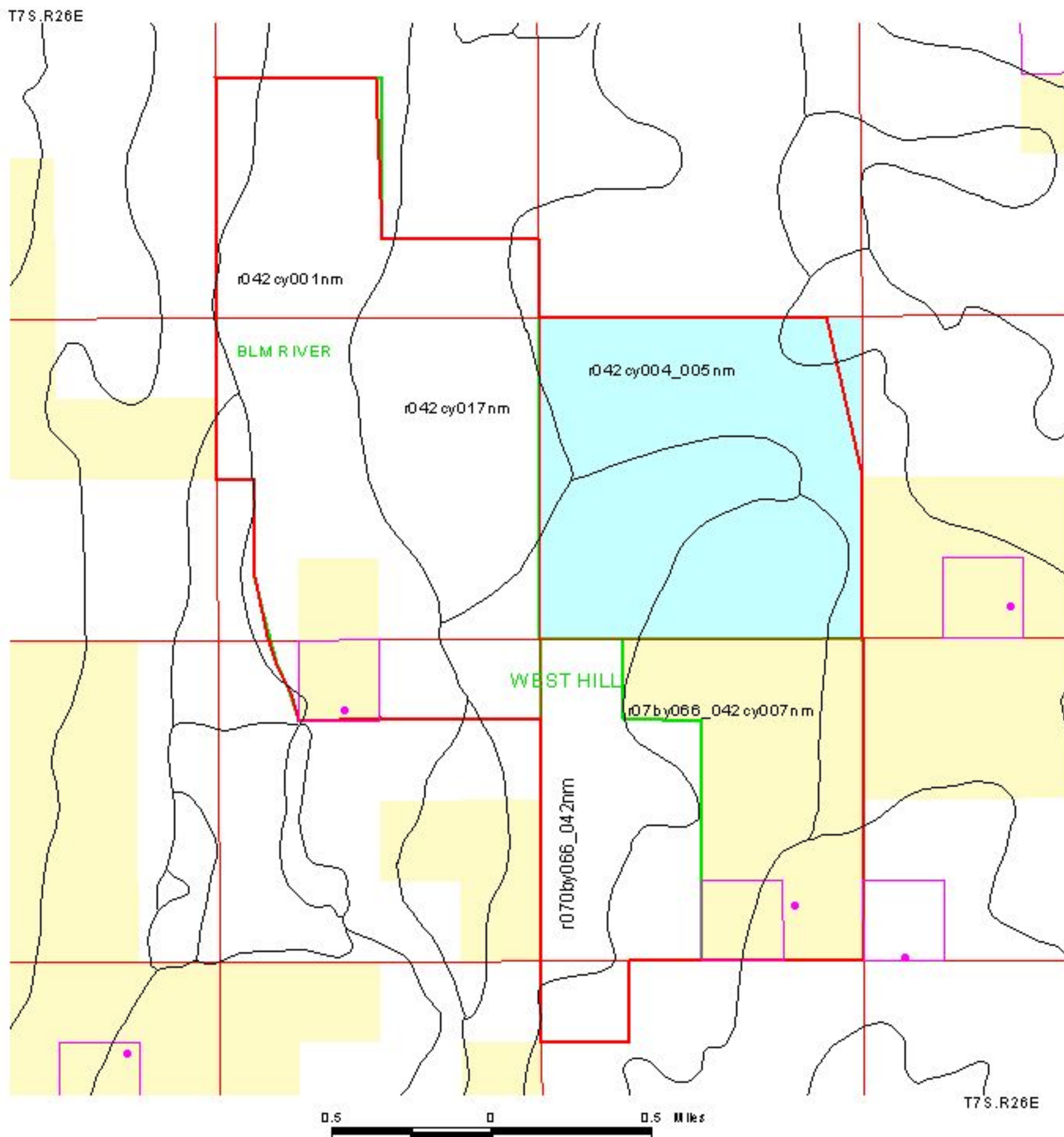
Report Parameters

SITE NAME LIKE 65023-HILL WEST-D051
 ON/AFTER 10/01/1980
 ON/BEFORE 09/30/2002



Rangeland Health Assessment Ecological Sites

Allotment 65023



Public



State



Study Locations



Private



Study Plots



Pasture Boundary



Ecological Sites



Allotment Boundary

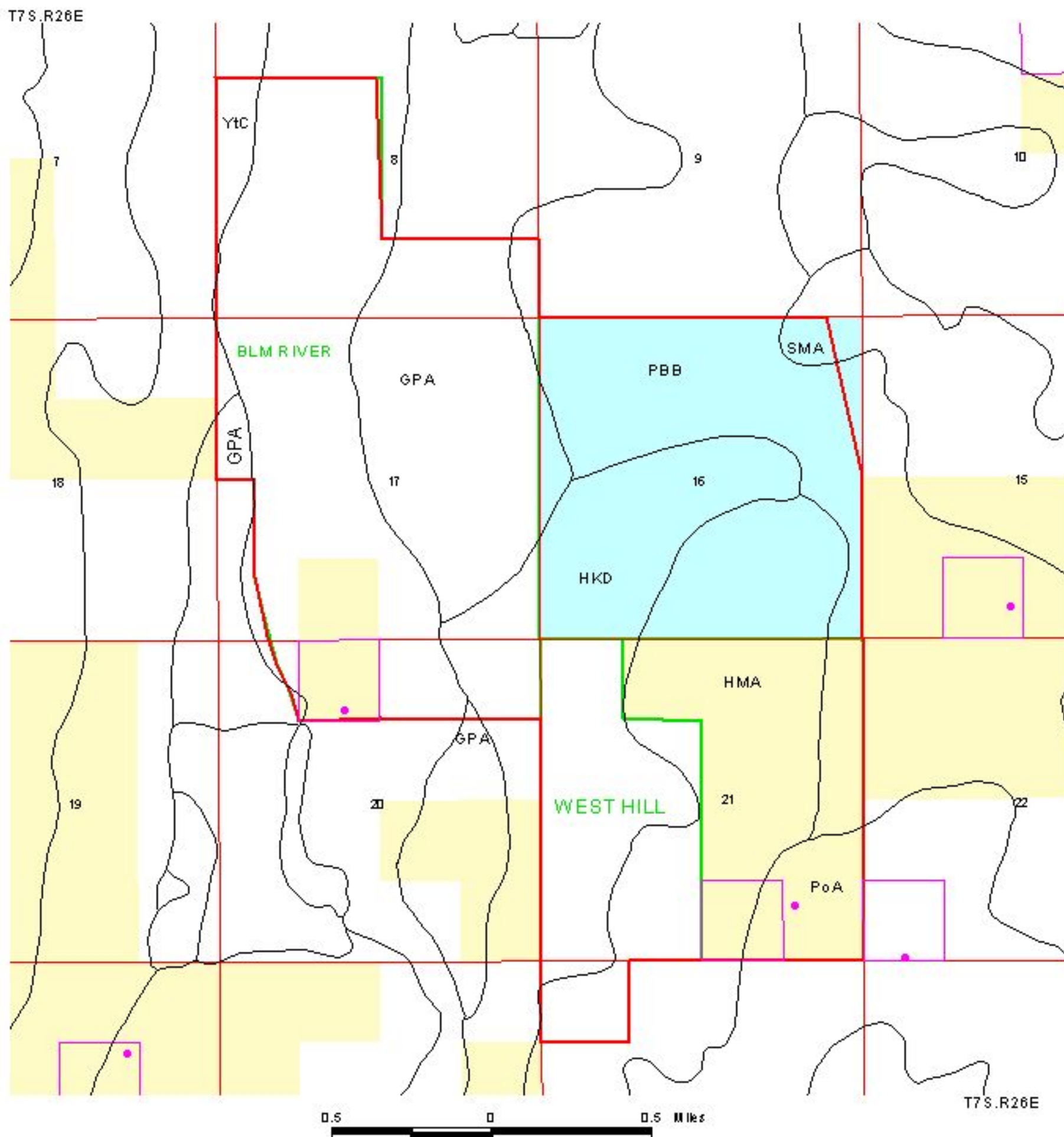
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Rangeland Health Assessment Soil Mapping Units

Allotment 65023



Public



State



Study Locations



Private



Study Plots



Pasture Boundary



Soil Mapping Units



Allotment Boundary

Produced by the Roswell Field Office
GIS Intern on July 3, 2003.

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